



REPUBLIC OF KENYA
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
State Department for Housing and Urban Development

ADDENDUM I
TENDER CLARIFICATIONS
PROPOSED MANUFACTURE, ASSEMBLY, DELIVERY, INSTALLATION &
MAINTENANCE OF WASTE WATER TREATMENT PLANTS FOR THE
AFFORDABLE HOUSING PROGRAM UNDER FRAMEWORK AGREEMENT

TENDER NO. SDHUD/784/SPPM/006/2025-26

This is in reference to tenders' advertisement appearing in MyGov on 31st March, 2026 and a pre-bid conference held on 14th April, 2026.

S/NO	CLARIFICATIONS	RESPONSE
1.	Clarify on MR 10 requirements for the tender document NCA and EPRA certification requirements for WWTP Installations being an open tender for specialist item	MR 10 requirements has been expunged from the evaluation criteria.
2.	Installation Sites: A schedule of installation sites has not yet been provided. Will this information be shared with bidders prior to the submission deadline?	The installation sites are in all the 47 counties.
3.	Maintenance Costs: The tender requires bidders to include the cost of consumables and labor for a 10-year maintenance period. As the cost of consumables over a decade significantly outweighs the capital cost of the treatment equipment, including them in the primary bid causes the total price to exceed the State Department for Housing's cost estimates. Would it be possible to submit the maintenance cost as a separate bid?	Maintenance Cost is inclusive of the consumables within the 10 Years Period. Refer to Appendix on Revised Price Cap.
4.	Pumps: Item No. 3 of the BOQ for each size of treatment plant requests discharge pumps (e.g., Supply & Installation of 1 No. Duty, 1 No. Assist; Flowrate (Q) = 150m ³ /hr @ 70m Head). Given the substantial size of these pumps as the treatment plant capacity increases, we have the following questions: - Will these pumps be the primary means of discharging treated wastewater, or is it possible that plants will discharge effluent via a gravity overflow? - If gravity overflow is not an option, are there concerns regarding these pumps representing a major point of failure that could lead to the sewer system backups? - What redundancies are in place to mitigate this	i). The pumps are primary means of discharging treated effluent As an industrial Practice all bidders WWTP installations are expected to have a gravity overflow provision. ii) Gravity over flow provision serves as a secondary means of discharging treated effluent to avoid backflow in the system. iii) The Primary Redundancy level considered is the 1No. Duty & 1No. Standby Pump.

	potential single point of failure?	<p>The secondary level of redundancy is the Gravity Overflow system provision.</p> <p>See the attached revised BoQs attached in the Appendix</p>
5.	The successful bidder is required to pay for the trip for due diligence. At what stage will this be: Is after award or before award? If before award, will the costs be reimbursed if the bidder is not eventually successful.	The bidder is not required to pay for the Due Diligence
6.	In case of JV partners, will all the JV partners be required to have same qualifications even if one JV partner is a financier	<p>Joint Venture partners are not required to hold identical qualifications. However, the JV shall collectively demonstrate compliance with the tender requirements, and each partner shall provide documentation relevant to its role in the JV.</p> <p>The lead bidder shall be the manufacturer</p>
7.	<p>We note that the Tender Data Sheet currently limits Joint Venture (JV) membership to two entities: The Manufacturer and the Local Installer.</p> <p>In global practice, projects of this magnitude require manufacturers to collaborate closely with financial and investment partners. These partners typically require a formal, significant role within the JV to safeguard their capital and ensure project delivery. The current two-member limit effectively excludes these critical partners, thereby restricting a manufacturer’s ability to secure necessary funding and participate in the tender.</p> <p>We respectfully request an amendment to allow more than two (2) JV members. This change will accommodate financial institutions and investment partners, ensuring greater financial robustness and the successful execution of the project.</p> <p>Kindly consider increasing the maximum number of Joint Venture partners allowed in the tender from Two to Three partners.</p>	<p>The Bid shall allow for up to three (3) Joint Venture (JV) partners.</p> <p>However, bidders are advised that the local installer is not required to form part of the Joint Venture and may instead be engaged as a subcontractor to the lead manufacturer, provided all specified qualification and regulatory requirements are met.</p>
8.	Are the tenders specific for manufacturers or authorized resellers / distributors ?	<p>This is a manufacturer-led bid, with local installers engaged as subcontractors. A single manufacturer shall not support more than one bidder within the same category.</p> <p>Where a manufacturer is found to be participating in multiple bids under the same category, all such bids associated with that manufacturer</p>

		will be disqualified and deemed non-responsive. Bidders are therefore required to ensure exclusivity of manufacturer representation within their respective submissions to maintain compliance with the tender requirements
9.	<p>Kindly requesting the procurement entity to consider the extension of tender submission deadline by another 14 day (2 weeks).</p> <p>Will there be an extension of time since the Pre-bid meeting has taken place two weeks after advertisement of the tender and only two weeks are remaining to the deadline of tender submission? This remaining time is not sufficient to prepare responsive bids.</p> <p>Given that several clarification questions remain unanswered; can we expect an extension of the submission deadline? Please clarify the revised timeline</p> <p>We request for 4 weeks' extension</p> <p>We request for 21 days' extension</p> <p>The Borehole Tenders have a Tender deadline submission date of 28th April and Tender opening date of 30th April 2026. Is this a discrepancy?</p>	<p>The tender closing date has been extended for 30th April, 2026 at 9.00 a.m. to 14th May, 2026 at 9.00 a.m.</p>
10.	<p>The submission is Physical copies</p> <p>Can We also submit online, or only physical copies are approved</p>	<p>Bidders are required to submit their tenders in the physical format specified in the tender documents. Kindly note that the BOQs forms part of the tender documents and should be duly completed and submitted in the prescribed manner.</p> <p>Refer to the tender document ITT 25.1 Page 32 of the tender document</p>
11.	<p>We seek clarification regarding the Technical Evaluation Criteria which requires bidders to provide a "List of Clients in the last 5 years," "Reference contact details," and copies of "LPOs, Contracts, and Completion Certificates" for each project.</p> <p>All major manufacturers operate under strict compliance with the Global Data Protection LAws and the Kenya Data Protection Act (DPA) 2019. Their agreements with private sector clients include non-</p>	<p>All information submitted shall be handled in accordance with the</p>

	<p>disclosure clauses and data privacy policies that prohibit the sharing of third-party personal data (such as contract values, direct contact person names and phone numbers) or sensitive commercial contract details without explicit prior consent from said clients.</p> <p>In light of this, we request clarification on the following:</p> <ol style="list-style-type: none"> 1. How does the State Department intend to deal with bidders who strictly adhere to the data protection laws and internal company policies does not allow them to disclose client details? 2. How does the State Department intend to guarantee the protection of this third-party data once submitted, in line with its obligations as a "Data Controller" under the DPA? <p>Strict adherence to data privacy is a mandatory legal requirement for many organizations. We wish to ensure that our commitment to the DP Laws does not lead to our bid being declared non-responsive or failing the technical evaluation for "missing information."</p>	<p>applicable laws and government procedures, including the Data Protection Act, 2019, for purposes strictly related to tender evaluation and contract award.</p> <p>Compliance with data privacy obligations will be taken into account; however, bidders must still provide adequate evidence to demonstrate compliance with the evaluation requirements. Failure to provide sufficient evidence may lead to non-responsiveness.</p>
12.	<p>Under specific and ongoing experience – technical evaluation criteria</p> <p>The tender requirement states for provision of ongoing orders supplied in the last 3 years. We find this requirement contradictory as 3 years is a long time to have an ongoing project and also is similar to the completed orders of sets supplied in the last 3 years. Please clarify on this requirement and provide more details on the same.</p>	<p>Bidders are required to submit evidence of ongoing or recently active projects/orders,</p> <p>Item 7 is changed to read as follows: Ongoing Orders</p> <p>NB: Attach either LPO, Delivery Notes, Letter of Award, Orders, Contract and / or Recommendation from the Client for EACH project / order.</p> <p>Bidders are required to submit evidence of ongoing or recently active projects/orders, regardless of start date, to demonstrate current capacity. This requirement is not intended to duplicate completed experience but to complement it by confirming that the bidder is presently executing similar works.</p>
13.	<p>How will you guarantee payments to the manufacturers? Will the State Department for Housing & Urban Development be issuing Letter of Credits (LCs) to the winning bidders?</p>	<p>Payment shall be made in accordance with the contract terms and conditions set out in the tender documents and the eventual contract.</p>

		Any specific payment security instruments, including Letters of Credit, shall apply only where expressly provided for in the contract documents.
14.	Request to SDHUD on the tender documents: Kindly consider increasing the number of JV partners to at least three (3) members	The Bid shall allow for up to three (3) Joint Venture (JV) partners . However, bidders are advised that the local installer is not required to form part of the Joint Venture and may instead be engaged as a subcontractor to the lead manufacturer , provided all specified qualification and regulatory requirements are met.
15.	For experiences, does it mean if we provide less contracts but the margin is more than 20million okay? What happens if you dont have the five experiences,(contracts) but the few we have are way much more than the 20,000,000 value required	Bidders must comply with the specific experience requirements as stated in the tender documents.
16.	Does the ministry give any written contract documents to bidders?	The Procuring Entity shall issue a written contract to the successful bidders as provided for in the tender document.
17.	<p>Also considering we had bought tender security documents from the banks previously for these tenders and these tenders have since been cancelled and retendered, could we get an addendum or letter stating that these are re-advertisements? This will enable suppliers/tenderers to use the same bank tender security issued on Egg portal</p> <p>I refer to the tender initially advertised under the e-Government Procurement (eGP) system, which has since been revised to a manual submission process with a different tender number.</p> <p>I wish to kindly request the issuance of an official addendum to formally communicate the changes in the tender number, bid security amount as well as tender number This addendum will enable us to present the same to our bankers for the processing and issuance of new bid securities aligned with the revised tender details.</p> <p>As we had already initiated the preparation of bid securities based on the earlier advertisement</p>	<p>This is a different tender from the previous ones advertised in the e-GP system. Bidders were informed that the tenders will be re-advertised.</p> <p>See link</p> <p>https://housingandurban.go.ke/wp-content/uploads/2026/02/CANCELLED-INTERNATIONAL-COMPETITIVE-BIDDING-33x3-1.pdf</p>
18.	Under Experience in the Technical Evaluation bidders are expected to attach Notarized Evidence of Completed Orders, Deliveries, Recommendation Letters & Company Portfolio.	The requirement for notarized evidence of Completed Orders, Deliveries, Recommendation Letters & Company Portfolio has been

	Would it be acceptable if we provide audited evidence instead of notarized documents? The audit company is the one who audited the financial reports.	expunged .
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All the other conditions remain the same.

Head Supply Chain Management Services

For: The Principal Secretary

Ministry of Lands, Public Works, Housing and Urban Development

State Department for Housing and Urban Development.

P.O. Box 30119 -00100 NAIROBI, KENYA

Dated 23rd April, 2026

**WWTP TENDER
ADDENDUM NO.1
UPDATED PRICE CAP**

ITEM	DESCRIPTION	UNIT	PRICE CAP RATE (KES)
1.000	Waste Water Treatment		
1.001	100 P.E ASBR System	Item	1,846,375.00
1.002	500 P.E ASBR System	Item	6,131,875.00
1.003	800 P.E ASBR System	Item	7,821,000.00
1.004	1000 P.E ASBR System	Item	11,063,750.00
1.005	1200 P.E ASBR System	Item	13,456,500.00
1.006	1500 P.E ASBR System	Item	17,695,625.00
1.007	2000 P.E ASBR System	Item	21,927,500.00
1.008	2500 P.E ASBR System	Item	30,159,375.00
1.009	3000 P.E ASBR System	Item	34,391,250.00
1.010	3500 P.E ASBR System	Item	36,123,125.00
1.011	4000 P.E ASBR System	Item	40,855,000.00
1.012	5000 P.E ASBR System	Item	50,318,750.00
1.013	7500 P.E ASBR System	Item	68,978,125.00
1.014	10000 P.E ASBR System	Item	79,137,500.00
1.015	12000 P.E ASBR System	Item	88,565,000.00
1.016	15000 P.E ASBR System	Item	103,956,250.00
1.017	20000 P.E ASBR System	Item	137,275,000.00

**Revised BoQs for TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED
AHP UNITS**

ITEM	DESCRIPTION	UNIT	QTY	AMOUNT (KES)
	PRELIMINARIES			
1.00	<u>PRELIMINARIES & CONDITIONS OF CONTRACT</u>			
1.01	Allow for co-ordination of works with the Main Contractor and other Sub-	Item	1	
1.02	Allow for preparation of all "shop" drawings and submitting to the Engineers for approval prior to commencement of work on site <i>Note: Bidder should confirm the conditions for each site before submission.</i>	Item	1	
1.03	Allow for on-site visits to the bidder's company premises / factory for thorough due diligence for 5 No. of persons to visit the manufacturing factory [for three (3) working days excluding Travelling days] to verify the Waste Water Treatment Plant Installations specifications manufacturing factory capacity and quality of products before award of the contract is given: The cost of the visit to include: i) Visa processing fees ii) Return air-tickets to and from the factory iii) Any transfer fees iv) Local transport both in the city of departure and destination v) Accommodation for at a hotel/resort not less than 4 stars in rating vi) An allowance (In line with GOK Guidelines) to each member of the team vii) Any other incidental cost for smooth facilitation of the trip.	Item	1	
1.04	To ensure the equipment are provided to specifications, allow for factory visit for 5 No. of persons to visit the manufacturing factory [for three (3) working days excluding Travelling days] to verify the BWaste Water Treatment Plant Installations specifications and witness all the relevant factory tests before approval of shipping is given: The cost of the visit to include: i) Visa processing fees ii) Return air-tickets to and from the factory iii) Any transfer fees iv) Local transport both in the city of departure and destination v) Accommodation for at a hotel/resort not less than 4 stars in rating vi) An allowance (In line with GOK Guidelines) to each member of the team vii) Any other incidental cost for smooth facilitation of the trip.	Item	1	
1.05	Allow for preparation of all "As Built" Drawings immediately after Practical Completion of the works.	No.	1	
1.06	Allow for the preparation of all "Operations & Maintenance Manuals" immediately after Practical Completion of the works.	No.	1	
1.07	Allow for on-site Training of the Operators	No.	1	
1.09	Allow for all the preliminaries relating to this contract as specified	No.	1	
2.00	Preliminaries : Sub Total (V.A.T) Inclusive			
	Preliminaries: To Main Summary Page			

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 100 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 15m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 100 Daily average flow: 15m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 5m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 100 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____ Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 200 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 30m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 200 Daily average flow: 30m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 10m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 200 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____ Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 500 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 75m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 500 Daily average flow: 75m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 20m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 500 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 800 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 120m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 800 Daily average flow: 120m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact, 	

	<p>Treated Effluent Gravity Over Flow Provision</p> <ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 35m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 800 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 1000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 150m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 1000 Daily average flow: 150m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact 	

	<p>Chlorination, Treated Effluent Gravity Over Flow Provision.</p> <ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 40m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 1000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 1200 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 180m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 1200 Daily average flow: 180m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 45m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 1200 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____ Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 1500 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 225m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 1500 Daily average flow: 225m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 45m³/hr @ 30m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 1500 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____ Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 2000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 300m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 2000 Daily average flow: 300m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 60m³/hr @ 50m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 2000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date:

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 2500 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 375m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 2500 Daily average flow: 375m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 75m³/hr @ 50m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 2500 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date:

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE : 3000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 450m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 3000 Daily average flow: 450m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 90m³/hr @ 50m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 3000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L./Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE : 3500 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 450m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 3000 Daily average flow: 450m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 110m³/hr @ 50m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 3500 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 4000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 600m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 4000 Daily average flow: 600m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 120m³/hr @ 60m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 4000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 5000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 750m³ per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 5000 Daily average flow: 750m³/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 150m³/hr @ 70m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 5000 P.E Plant	

All bidders to give an **indicative** biannual NEMA Effluent discharge license renewal after installation Amount **KES**_____ (Note: This will not be part of the tender quotation Amount in the summary page)

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date:

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE : 7500 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 1125m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 7500 Daily average flow: 1,125m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 225m³/hr @ 80m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 7500 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE : 10000 P.E PLANT SITE:_____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 1500m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 10000 Daily average flow: 1,500m3/Day Effluent discharge parameter standard after treatment:</p> <p>a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml</p> <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 300m³/hr @ 100m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 10000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE : 12000 P.E PLANT SITE:_____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 1800m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 12000 Daily average flow: 1,800m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 350m³/hr @ 100m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 12000 P.E Plant	

All bidders to give an **indicative** biannual NEMA Effluent discharge license renewal after installation Amount **KES**_____ (Note: This will not be part of the tender quotation Amount in the summary page)

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTE WATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 15000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 2250m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 15000 Daily average flow: 2,250m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact Chlorination, Treated Effluent Gravity Over Flow Provision. 	

	<ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 450m³/hr @ 100m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 15000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	
7.13	Flowrate (L/Min)		

7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9.00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH4 + Nitrate-N03 + Nitrite –N02	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____ Days

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

TENDER FOR WASTEWATER TREATMENT PLANT FOR PROPOSED AHP UNITS

SYSTEM SIZE: 20000 P.E PLANT SITE: _____

SCOPE:

Design Supply and Install a Waste Water Treatment Plant in line with NEMA Schedule 6 Effluent Discharge Requirements

System Design Type (Tick Where Applicable)

ASBR		MBR		MBBR		SBR	
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SECTION 1 – PRICE SCHEDULE FOR WWTP

Item	Description	Amount (KES.)
1:00	<p>Supply and Installation of Supply, installation, testing and commissioning of fully automatic sewage treatment plant based on Advanced Sequential Batch Reactor (ASBR) process or Equivalent & Approved with sewage handling capacity of 3000m3 per day. The plant will treat for Organic (BOD/COD), Solids (TSS), and Nutrient (N) removal. High effluent quality is required; suitable for environmental discharge standards & reuse such as irrigation is necessary. The plant process tanks will be constructed in RCC (by MC), and process equipment housed in a suitable control room (by MC). complete with all the necessary fittings and accessories.</p> <p>Commissioning of the Entire installation to the satisfaction of the Engineer and As Supply of “As Installed” drawings and maintenance Manuals for WWTP Installation</p> <p>Design specification to take consideration of the following: Population Equivalent (PE): 20000 Daily average flow: 3,000m3/Day Effluent discharge parameter standard after treatment:</p> <ul style="list-style-type: none"> a) BOD = <30mg/l b) COD = <50mg/l c) Total Suspended Solids = <30mg/l d) Ammonia = <100mg/l e) TDS = <1200mg/l f) PH = 6.5-8.5 g) E. Coli = Nil h) Total Coliforms = <1000/100ml <p>Sewage treatment plant shall include the following Processes & items:</p> <ul style="list-style-type: none"> • Coarse Screened Inlet • Equalization tank (Aerated & mixed to keep contents well mixed and avoid septicity) • 2mm Fine Screening • ASBR Reactor/s • Aerobic Sludge Digester • Effluent Equalization, Influent Flow Meter & Contact 	

	<p>Chlorination, Treated Effluent Gravity Over Flow Provision.</p> <ul style="list-style-type: none"> • Air Blowers, coarse & fine diffusers, Pumps (Duty & Standby) and process equipment • Effluent Floating Decanter complete with an isolation valve • Energy Efficient aeration blowers for fine process control, reduced power consumption, & soft start up for reduced genset load • Piping Pressure Pipes Class D, Fixtures, Brass Type Fittings, valves • Chlorine disinfection unit • Electrical Panels, • Instrumentation, Stroboscope and Alarm Signal for System Failure • Electrical Cabling, fixture, fittings etc <p>Contractor shall ensure submission of detailed drawings (Plan & Section), P&I diagram, schematic diagram for the above said component and additional component if so required for the complete working of the STP.</p>	
2:00	Cost for NEMA audit and Effluent discharge license Application & Renewal after installation of the plant for 10 Years	
3:00	Supply & Installation of 1No. Duty, 1No.Assist. Each Pump Delivering Flowrate (Q) = 600m³/hr @ 150m Head (Treated water discharge pump complete with control panel all necessary Brass fittings and accessories.	
4:00	Maintenance Fee for 10 years of the system including consumables replacement & repair of worn-out parts.	
	Total (V.A.T Incl) For 1No. 20000 P.E Plant	

SECTION 2 – LOAD SCHEDULE FOR WWTP

All bidders to submit their electrical load equipment schedule by filling the table below

Item	Description: Function and equipment specification)	Arrangement	Power Rating	No. of operational hours per day
1.00	Pumps			
1.01		Duty & Standby		
1.02		Duty & Standby		
1.03		Duty & Standby		
1.04		Duty & Standby		
1.05		Duty & Standby		
1.06		Duty & Standby		
2.00	Blower			

SPACE REQUIREMENT FOR THE PLANT (SQM).....

DEPTH REQUIRED BELOW INVERT LEVEL (M).....

SECTION 3: EQUIPMENT SPECIFICATION

1.00	Blower	Description	
	Blower 1		
1.11	Rated Flowrate (L/Min)		
1.12	Rated Pressure (Bars)		
1.13	Country of Origin, Brand & Model No:		
1.14	Warranty (Years)		
	Blower 2		
1.21	Rated Flowrate (L/Min)		
1.22	Rated Pressure (Bars)		
1.23	Country of Origin, Brand & Model No:		
1.24	Warranty (Years)		
2.00	Feed Pump Set		
2.10	Rated Flowrate (L/Min)		
2.20	Rated Head (Bars)		
2.30	Country of Origin, Brand & Model No:		
2.40	Warranty (Years)		
3.00	Discharge (Treated Effluent) Pump Set		
3.10	Rated Flowrate (L/Min)		
3.20	Rated Head (Bars)		
3.30	Country of Origin, Brand & Model No:		
3.40	Warranty (Years)		
4.00	Clear Water Pump Set		
4.10	Rated Flowrate (L/Min)		
4.20	Rated Head (Bars)		
4.30	Country of Origin, Brand & Model No:		
4.40	Warranty (Years)		
5:00	Chlorine Dozing		
5.10	Chlorine Feeder		
6:00	Control Panel Specifications		
6.10	Phase Failure Protection (For 3 Ph Supply)	Mandatory	
6.20	Mcb Protection	Amps:	
6.30	Over & Under Voltage Protection Relay	Tolerance:	
6.40	Item 6.00 Specifications Confirmation	Sign:	
7:00	Diffusers Specifications		
	Description	Design	Compliance Confirmation
7.11	Type	Disc Type	
7.12	Operation Model	Course Bubble	

7.13	Flowrate (L/Min)		
7.20	Type	Disc Type	
7.21	Operation Model	Fine Bubble	
7.22	Flowrate (L/Min)		
7.30	Item 7.00 Specifications Confirmation	Sign:	
8:00	Effluent Filter Specifications		
8.10	Course & Fine Screen Filter		
8.20	Item 8.00 Specifications Confirmation	Sign:	
9:00	Pipe Work		
9.10	Pressure Pipes as Pvc Class D		
9:20	Item 9.00 Specifications Confirmation	Sign:	

SECTION 4 – TREATED WATER STANDARDS SCHEDULE

The effluent treatment plant should operate with the following parameters regulated by the 6th Schedule of the Water Quality Regulations 2006.

Parameter	Guide Value	Expected Treated Water
PH	6.5-8.5	
Biological Oxygen Demand (5 days at 20 oC)	30 (mg/L) max	
Chemical Oxygen Demand	50 (mg/L) max	
Suspended Solids	30 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂	100 (mg/L) max	
Total Dissolved Solids	1200 (mg/L) max	
E.Coli	Nil/100 ml	
Total coliform	1000/100 ml	
Colour	Less than 40 hazens	

Additional parameters will be guided by WHO Standards for effluent discharge for developing countries.

N/B Note that that waste water from the plant will be used for the irrigation and the watering of the expansive facility gardens.

Duration for Installation: _____Days

Tenderer's signature _____Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project

MAIN SUMMARY PAGE: WWTP INSTALLATION

Item	Description		Qty	Rate (KES)	Amount (KES)
1	General Preliminaries Carried Forward from Page 1	All	1		
2	System Size 1: 100 P.E Carried Forward from Page 3	100 P.E	1		
3	System Size 2: 200 P.E Carried Forward from Page 7	200 P.E	1		
4	System Size 3: 500 P.E Carried Forward from Page 11	500 P.E	3		
5	System Size 4: 800 P.E Carried Forward from Page 15	800 P.E	1		
6	System Size 5: 1000 P.E Carried Forward from Page 19	1000 P.E	22		
7	System Size 6: 1200 P.E Carried Forward from Page 23	1200 P.E	3		
8	System Size 7: 1500 P.E Carried Forward from Page 27	1500 P.E	11		
9	System Size 8: 2000 P.E Carried Forward from Page 31	2000 P.E	19		
10	System Size 9: 2500 P.E Carried Forward from Page 35	2500 P.E	6		
11	System Size 10: 3000 P.E Carried Forward from Page 39	3000 P.E	8		
12	System Size 12: 3500 P.E Carried Forward from Page 43	3500 P.E	2		
14	System Size 13: 4000 P.E Carried Forward from Page 47	4000 P.E	3		
15	System Size 14: 5000 P.E Carried Forward from Page 51	5000 P.E	8		
16	System Size 15: 7500 P.E Carried Forward from Page 55	7500 P.E	11		
17	System Size 16: 10000 P.E Carried Forward from Page 59	10000 P.E	17		
18	System Size 17: 12000 P.E Carried Forward from Page 63	12000 P.E	8		
19	System Size 18: 15000 P.E Carried Forward from Page 67	15000 P.E	7		
20	System Size 19: 20000 P.E Carried Forward from Page 71	20000 P.E	2		
	Total V.A.T Inclusive		Page 82 of 83		

Total Cost KES:

Tenderer's signature _____ Date: _____

*Bidders must provide a list of completed and/or awarded contracts of a similar nature that demonstrate competence in completing the project. All informative product brochures, specifications and catalogues must be submitted as part of bidding documents.